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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,600

04/28/2006

Martin Saeterbo

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EXAMINER

SWINNEY, JENNIFER B

ART UNIT

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3724

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,600	Applicant(s) SAETERBO ET AL.	
	Examiner JENNIFER SWINNEY	Art Unit 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4, 8-12, 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendments filed July 24, 2009 have been entered. Claims 1-4 and 8-22 remain pending in the application. Claims 5-7 and 13 have been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 8-10, 14-16, and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2002/003083 to Claesson et al. (Claesson) in view of US Patent Application Publication No. 2002/0083805 to Lundblad et al. (Lundblad) and in further view of US Patent No. Patent No. 5,913,955 to Redmond et al. (Redmond).

In Re to Claims 1,8, 14, and 18, Claesson teaches a device (Fig. 1) for vibration damping and or/controlling the flexion of an object in machining, wherein the object is a tool, tool holder, or workpiece which comprises at least one force exchange device, is an actuator (piezoelectric actuator, Fig. 2, 26,27), operative to exchange a force having a force component having a force component directed at a right angle while parallel to the surface object (Fig. 1, Pg 2, Para 0027); or exchanging a moment between the object and device (Pg. 3, 0031, it is noted, although Fig. 2 and Fig. 5 are different embodiments, the tool holder and actuators of Fig. 2 are capable of functioning as described by Fig. 5).

In Re to Claims 2 and 9, a force transmission device (Fig. 1, Pg. 2, Para 0027) positioned between a force exchange device (Fig. 2, 26,27) and an object (Fig. 2,22).

In Re to Claims 3 and 12, a force exchange device (Fig. 2, 26,27) disposed between a clamp (Fig. 2, 23) and the object (Fig. 2,22); a control unit (Fig. 2,28, Pg. 2, Para 0028) for regulating input to an actuator.

In Re to Claim 15, a control unit (Fig. 2,28, Pg. 2, Para 0028) for regulating input to an actuator.

In Re to Claim 16, a sensor (Fig. 2, 24,25) disposed on or in the object for detecting vibrations of the object.

In Re to Claim 20, a device is modular and permits different dimensions and geometrical configurations of the object (Fig. 2,21, inserts are known to be interchangeable and comprise of various shapes).

In Regards to Claims 1-2, 4, 9-11, 17-22, Claesson does not teach **a force exchange device is attached to a locator sleeve surrounding the object, a locator sleeve is moveable along a surface of an object**, a force transmission device, a force exchange device external the surface of the object, and a force exchange device exchanges a moment provided by a connector part for the object for fixing the object to a clamp for the object. It is noted, Claesson teaches the use of a sensor, but does not explicitly teach the use of an accelerometer sensor.

In Regards to Claims 1-2, 4, 9-10, and 19, Lundblad teaches **a force exchange device (Fig. 1) is attached to a locator sleeve surrounding the object (Fig. 9, 1), the locator sleeve (Fig. 9, 13) is moveable along a surface of an object (Fig. 9), a**

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force exchange device external the surface of the object (Fig. 1,8, Pg. 3, Para 0040), a force exchange device (Fig. 9,8) disposed between a force transmission device (Fig. 9, 1) and locator device (Fig. 9, 13), a force transmission device (Fig. 9, 1) and a force exchange device (Fig. 9, 8) are positioned in the locator device (Fig. 9, 13); a force transmission device (Fig. 9, 1) is positioned between a force exchange device and the object (Fig. 9), actuators being controlled passively (Pg. 1, Para 0010). It has been interpreted, a locator sleeve is any structure capable of being located, in which (13) is capable of being located (moved) along the surface of the object, a force transmission device is any structure capable of transmitting a force. Further note, according to Merriam Webster Dictionary, the term attach means to bring into association (therefore, it has been interpreted, the force exchange device is brought into association with the locator sleeve surrounding the object).

In Regards to Claims 11, 17, 19, and 21-22, Redmond teaches it is old and well known to use accelerometers sensors to provide information to determine the magnitude of the internal moment required to damp the vibrations being produce. Redmond also teaches actively controlled actuators using an algorithm (Col. 5, lines 5-10). an actuator for applying force for applying a moment (Col. 3, lines 4-10), and an actuator for absorbing vibrations from an object (Col. 3, lines 15-21).

Examiner notes, it is old and well known in the art for elongation and bending deformations to occur as vibrations are produced during a machining process. These deformations are capable of controlled by use of piezoelectric actuators, which aid in controlling damping and vibrations. Therefore, it would have been obvious to one having

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ordinary skill in the art at the time of invention to provide Claesson with a force exchange device, positioned external to the surface of the object in an area, in which, the maximum axial elongation occurs during bending in order to control vibrations as deformation occurs as taught by Lundblad. It is further noted, locator sleeves are capable of being positioned in a desired place along the bar and positioning the bar in a desired position to transmit a desired force to an object being machined. Therefore, it would have been obvious to attach a force exchange device to a locating sleeve near the root of the bar to prevent potential interference with the tip of the tool. Accelerometer sensors are old and well known devices utilized to for communicating specific information. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to provide Claesson with an accelerometer sensor as taught by Redmond to communicate the required information for controlling a damping process. Controlling vibrations is essential to reducing noise, wear, and performing a machining process, therefore, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

Response to Arguments

4. The 35 USC 112, first paragraph rejection has been overcome. Examiner acknowledges the term "locator sleeve" is properly supported in an enabling disclosure.
5. Applicant's arguments filed 24 July 2009 have been fully considered but they are not persuasive. Applicant argues, the prior art does not disclose at least one force

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exchange device is attached to a locator sleeve surrounding the object, the locator sleeve is moveable along a surface of the object.

Examiner respectfully disagrees, as previously stated the prior art (Claesson as modified by Lundblad) teaches a force exchange device is attached to a locator sleeve surrounding the object the locator sleeve is moveable along a surface of an object (as seen in Figure 9, Lundblad). The locator sleeve is capable of being positioned in a desired place along the bar and positioning the bar in a desired position to transmit a desired force to an object being machined. Also note, the term attach means to bring into association (in which, it has been interpreted, the force exchange device is brought into association with the locator sleeve surrounding the object).

6. In regards to applicant's request for clarification, on page 3, in regards to at least one force exchange device operative to exchange a force having a force component having a force component directed at a right angle to the surface of an object. It is depicted in figure 2, that a force exchange device is operative to exchange a force, which will produce a resultant force directed at a right angle to the surface of the object.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER SWINNEY whose telephone number is (571) 270-5843. The examiner can normally be reached on Monday-Friday, 7:30 am-5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Daniel Prone/
Primary Examiner, Art Unit 3724

09-09-09

/JS/